Bee Management
or
HOW does a Beekeeper HELP his bees?

Most of you have heard of beekeepers (right in your area) having annual yields of 100, 125, or even 150 pounds of honey in most years; whereas your colonies seem only to produce 40, 60, or 80 pounds in most years. Your natural inclination is say "Somebody is telling tall tales" (just plain lying), but suppose you personally visited his apiary on May 31st and found that his colonies each had 4 or 5 Illinois supers FULL, but your colonies only had 2 or 3, and both of you had bought new queens from the same queen breeder! WHAT would you think then? Could it be that his bee management technique is better than yours?

WHAT is bee management? Let's talk about it; as well as bring you up-to-date to honey production techniques learned in the past 50 years. When I began keeping bees in Bethesda, Maryland back in the Depression Days of 1933, the great majority of apiarists were just bee HAVERS. They HAD bees, and frankly knew very little about bee management, suffered with "eternal" swarming, were always short of equipment, usually waited too late in the season to do those things that should have been done, never requeened, and were happy with a average annual honey yield of 25 -50 pounds. However, the hives of my mentor, Dr. James I. Hambleton, Chief of the Bethesda Bee Laboratory (precursor of Beltsville Bee Lab), just 2 miles from my house, were producing 75-100 pds. every year and rarely swarmed. Dr. Hambleton made it very clear to me back in those days the importance of bee management; and although bees that are just left alone, like wild bees, can survive and produce 25-50 pounds of SURPLUS honey annually, they need a knowledgeable beekeeper's help to produce more surplus honey than that and keep swarming at a minimum.

During these past 50 years, particularly during the past 15 years due to research about mites, bee research has proven that the number one cause of swarming is a CROWDED, CONGESTED BROOD CHAMBER. Secondly, a very young queen (less than 12 months old) is un- likely to swarm because queen pheromone production is so high that it can "glue" 40,000 to 60,000 worker bees into a single functioning unit. Thirdly, lots of empty drawn comb must be in place on the hive at the start of the nectar flow to store the thin watery nectar until it can be ripened into honey. Finally, your bees must be HEALTHY bees, free of bee diseases like Nosema, foulbrood, chalkbrood, etc., and relatively free of pests like both Tracheal and Varroa mites, skunks, mice, small hive beetles, etc.

Honey production requires LOTS of foraging age bees (bees over 19 days old) and having these foragers ready for "work" when the major nectar flow starts in Montgomery County, MD about April 20th means that the egg to produce this foraging age bee has to be laid by the queen 40 days in advance of April 20th, which is March 11th. Normally, in our area, queens might start laying in January, but are not laying heavily until late February. A beekeeper can HELP his colony get earlier egg laying by feeding 1:1 sugar syrup by February 1st as a brood production stimulant. The perfectly normal movement of bees in a colony during the winter is UP. They consume their stores in the bottom brood chamber in early winter and leave it completely empty as they eat their

way up into the second brood chamber as the winter progresses, and the queen starts laying in the upper brood chamber. Feeding brood requires tremendous amounts of NECTAR (or honey diluted by water gathered by the bees). BEE LARVA DOES NOT EAT HONEY! The 1:1 sugar syrup is artificial nectar, and the bees don't have to wait until a warm day to fly out and collect water to dilute the honey in the hive to feed the brood. Bees don't store nectar or sugar syrup AWAY from the brood where it will get cold, but store it close-by, surrounding the area that they are warming to 91-96¡ for the queen to lay eggs. When they get the upper brood chamber filled with as much brood as they can keep warm, they STOP the queen from laying until open cells are available; but will NOT move the queen back DOWN to the empty lower brood chamber because it is empty of nectar, honey, sugar syrup, pollen and cold Here too, the beekeeper can HELP his bees by providing laying space for the queen and their normal UP-WARD movement of the brood nest by REVERSING the position of the brood chambers when indicated (3-5 times between January and May). REVERSING is simply moving the top brood chamber which has center frames of brood and the queen into the lower brood chamber position, so that now the upper brood chamber is empty and is warmed because heat moves upward so the worker bees ready these upper cells for the queen to move up there to lay, leaving the capped brood in the lower body to emerge and then REVERSE again. Reversing is a system that always provides laying space for the queen, space for nectar or sugar syrup close by, and warmth for the larva. This provides LOTS of foraging age bees on time for the major nectar flow in late April and all of May. It also promotes swarming because the hive is getting congested with lots of bees and brood, so the beekeeper has to stop swarming impulses. HOW? Get the foraging age bees OUT of the BROOD CHAMBER SPACE, by putting a super of drawn comb in place over the brood chamber about April 1st, let the bees move some nectar into it or even a smattering of brood and then put a queen excluder in place under it (make sure the queen is back down in the brood area) and make sure there is either an upper entrance or an Imirie Shim in this super area as an entrance and exit for the forager bees rather than forcing their way back and forth through the congested brood area. Put ALL of your supers of drawn comb (no foundation) in place about April 15th, surely before May 1st. Bees do NOT collect honey and bring it into the hive! They collect thin, watery nectar (perhaps 80% water), store it temporarily in the supers until they have time to evaporate the water down to thick honey (about 16-18% water). Hence, they need lots of storage space for the nectar or they will quit work and start making swarm preparations. I put 5 Illinois supers of drawn comb in place on April 15th. Many readers do not have DRAWN COMB and have to use foundation. Read earlier PINK PAGES about how to use foundation, but YOU CAN ONLY USE ONE SUPER OF 10 FRAMES OF FOUNDATION AT A TIME, and not add a second super of foundation until the first super is about 70% drawn. Your job is get foundation drawn into comb, and then PROTECT it from wax moths as you store it until next year, explained in other PINK PAGES.

Now let us start an argument. Requeen EVERY year, so no queen is over 12 months old. Fall requeening is perhaps more difficult than spring requeening, but it has so many advantages over spring requeening that it is worth it. The great majority of professional honey producers requeen every 12 months or sometimes twice each year. These guys that have 5000 colonies or 20,000 colonies and make their total income from honey production would not bother to requeen every year if it was not a good reason. If you join the American Beekeeping Federation, attend their annual meeting, sit down with these professional honey producers and talk, they will tell you to requeen EVERY year and give you the reasons. So a new queen costs $10-$12, but it might prevent losing a swarm and a year's honey crop. That, by itself, is good enough for me. Further,

bee researchers have shown that about 60% of unmanaged colonies supersede their queen sometime during her first year. The great majority of superseded queens are developed from 2 day old larva rather than new larva and hence are poorly bred queens who just can't produce lots of brood to make a good honey crop; and if you live in Texas, maybe your new queen mated with an Africanized drone, which endangers you to being sued for keeping non-European bees.

I can't explain everything, so when you go in your colony, enter with the idea of LEARNING something by shrewd observation. Let me give you an example that many people just don't seem to grasp. In the late winter or early spring, bees rarely lay brood in 1,2 and 9, 10 or even 1, 2, 3 and 8, 9, 10, but lay brood in the CENTER frames of perhaps two stories or even three stories when using Illinois size frames like I do. WHY? The queen can not lay eggs at a temperature under 91¡, the eggs and larva must be kept that warm to mature, the nectar (or sugar syrup) used to feed the larva must be kept warm, and the only heat available is the body heat of the clustered bees. Heat rises and does not spread sideways towards the cold hive body sides, so the bees cluster around the center frames in a chimney effect rather than a warm wide body first floor and a cold wide body second floor or vice-versa. On a chilly March day, I have witnessed brood on 12 Illinois frames, the 4 centermost frames in broodbox #1, broodbox #2, and broodbox #3, and little to nothing on any of the outer frames in any of the 3 broodboxes.

Further, particularly during the late winter and early spring period, DON'T YOU RE-ARRANGE THE "FURNITURE". The bees know far better than you just where they want the brood in relationship to nectar, pollen, outside walls., etc. It is OK to reverse brood boxes up and down, but don't move frames to different positions sideways.

I want to leave you with a final thought, and I strongly suggest that you read Dr. Norman Gary's Chapter 8 in the 1992 Revised Edition of The Hive and The Honey Bee about BEE BEHAVIOR. The bee emerges from its cell with all the "brains" or knowledge that it will ever for its 6 weeks of life in flying weather. The bee is incapable of learning anything from you or knowing who you are, or whether you are gentle or nasty. It's mind was programmed by GOD back before Adam and Eve and it has not changed one iota since. Every action that our bee performs is based on what is NATURE'S way of doing and it does these things NOT by direction from some boss, queen, or older bee, but by the instinct that was given to it at its creation. No one teaches it how to build comb, how to fly or sting, how to feed larva, how to convert nectar into honey, or when to stop producing honey, because she never stops if there is a nectar flow. However, we humans are honored with the ability to think and LEARN. All we have to do is open our minds to accept new thoughts and then get off our lazy butts and LEARN. We can learn how to get our bees to produce more honey than they would if left to their own management. This is what BEE MANAGEMENT is all
about. We don't alter any phase of the normal operation of a bees action, but we HELP the bee to perform these actions for a longer time period in the same location rather than swarm or wait through the winter until the weather warms to lay lots of brood, or provide them with a younger well bred queen that can lay more eggs daily. Like so many famous beekeepers that I have talked to or read their works like Roger Morse, Brother Adam, or Freidrich Ruttner indicate that as we learn more about our bees, we dismiss the many ideas that our problems have been caused by bad weather, bad queen breeders, a lousy choice of race or stock, bad governmental decisions, or any other bad "this" or lousy "that", and we finally realize that 90% of our problems was our own lack

of knowledge about apis mellifera and our lack of willingness to accept the new findings each day by bee scientists and bee researchers.

I have but one regret after 68 years of wonderful beekeeping, and that is I am still learning each year more and more about my bees, but my time is running out and I won't be able to enjoy the new findings of this 21st century.

George Imirie
Certified Master Beekeeper

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Christmas is Coming

There are lots of books about bees, many of which are quite famous and respected. But since our biggest problems seem to be the mites and parasitic mite syndrome (PMS), books written before about 1992 are essentially obsolete because the Tracheal mite was first found in the U.S. in late 1984 and the more damaging Varroa mite was first found in the U.S. in 1987. It took several years to find any treatment procedures for these mites. Further, although the queen pheromone was first suggested about 40 years ago, little was really known about its importance until about 1990, and now in 2000 we know how very important the queen pheromone is as well as some other bee pheromones. Reading a book authored by Chevrolet in 1985 about repairing the carburetor or installing new brakes would be useless today, because all cars built since about 1990 have fuel injection and disc brakes rather than carburetors or drum brakes. Hence, for reliable information, read only the bee books published or revised in the last few years. Every beekeeper should have a bee "bible" on his desk. There is nothing better then the 1992 Extensively Revised Edition of THE HIVE AND HONEY BEE whose 1300+ pages are written by 34 of the TOP bee scientists or researchers in the U. S. and it is only $36.00.